

CLAIMS

1. A sheet-like electronic component clean transfer device which automatically transfers a sheet-like electronic component accommodated in a cassette opened in a casing between predetermined positions in the casing by a conveying robot in the casing under clean air which blows into the casing from a fan/filter unit provided on a ceiling of the casing,

wherein the fan/filter unit comprises a filter which removes 99.999% or above of particles of 0.1 μ m or above, and

the casing comprises a first floor which is horizontally arranged on a lower side of an arm of the conveying robot at a middle height part of the conveying robot and through which air can pass, partitions a first chamber between the fan/filter unit and the first floor, and partitions a second chamber between a casing bottom part through which air can pass to the outside and the first floor.

2. The sheet-like electronic component clean transfer device according to claim 1, wherein a wall of the first chamber comprises a door which moves up and down,

a door passage for the door provided on the second chamber side is covered with a partition, and

clean air which flows into the second chamber from the first chamber is directly discharged to the casing bottom part through the door passage.

3. The sheet-like electronic component clean transfer device according to claim 1 or 2, wherein a gap whose width is not less than 1 mm and not more than 30 mm is provided between a door frame part provided on the wall of the first chamber and the door set so as to be adjacent thereto, and/or between the door frame part and the cassette, and between the first floor and a body of the conveying robot.

4. The sheet-like electronic component clean transfer device according to any of claims 1 to 3, wherein the conveying robot comprises:

a dust generation preventing seal structure provided to an articulated part of the arm; and

a vent hole which downwardly discharges air in a body which supports the arm with a descending operation of the body.

5. The sheet-like electronic component clean transfer device according to any of claims 1 to 4, wherein the casing comprises a second floor which is horizontally arranged in the vicinity of a base of the conveying robot and changes a degree of opening of the casing bottom part with respect to the outside and through which air can pass.

6. The sheet-like electronic component clean transfer device according to any of claims 1 to 5, wherein a degree of opening of the first floor is not less than 5% and not more than 50%, and a degree of opening of the casing bottom part is not less than 5% and not more than 70%.

7. The sheet-like electronic component clean transfer device according to any of claims 1 to 6, wherein an internal pressure of the first chamber is higher than an internal pressure of the second chamber, and

an internal pressure of the second chamber is not less than 0.1 Pa.

8. The sheet-like electronic component clean transfer device according to any of claims 1 to 7, wherein the number of times of ventilation of the first chamber is not less than 5 and not more than 45 per minute.

9. The sheet-like electronic component clean transfer device according to any of claims 1 to 8, wherein a blowing speed of the clean air into the first chamber from the fan/filter unit is not less than 0.1 m/second to not more than 0.65 m/second.

10. The sheet-like electronic component clean transfer device according to any of claims 1 to 9, wherein one wall of the casing has an opening part which opens to at least one of the first chamber and the second chamber,

a degree of opening of the opening part with respect to the one wall is not more than 20%,

an internal pressure of the first chamber is not less than 0.1 Pa,
and

the number of times of ventilation of the first chamber is not less than 10 and not more than 45 per minute.

11. A sheet-like electronic product manufacturing system comprising the sheet-like electronic component clean transfer device according to any of claims 1 to 10.